DOCTRINE ISSUE

STRATEGIC EFFECTS

Who we are

- **Maj Kevin Cole**
- **Chief, Operation Assessment Branch, Headquarters Air Force Doctrine Center**
- **USAF Weapons School Graduate**
- **B-52 Bombardier/Navigator**

- **Maj Ray Laffoon**
- **Chief, Long-Range Air Warfare Branch**
- **POC: AFDD 2-1.2, *Strategic Attack***
- **B-52 Instructor Electronic Warfare Officer**
- **B-1 Defensive Systems Officer**

Why Strategic Effects?

- Aerospace power is an inherently versatile force, able to effect the enemy at all levels of war (AFDD 1)
  - We should aim for the highest-level effects possible in a given situation
  - Strategic effects are well beyond the proportion of the effort expended in execution
- However:
  There is no universally accepted paradigm for strategic effects. There is no accepted predictive model

Effects Based Planning/Targeting

- Strategic Effects drives effects based planning
- This is the way of the future in force employment
  - Grouping based upon effects they achieve not on what platform/force is executing
- The CINC's intent is on effects desired
  - Allows the JFACC to apply airman's operational art
- Planning on the effect desired versus the traditional sequential attrition of forces
- Being utilized in wargames
  - Navy Global 98
  - Global Engagement

Importance of Modeling Strategic Effects

- The capability to analyze and model strategic effects is key to all core competencies, especially Global Attack and Precision Engagement
- The Strategic Effects Symposium did not reach a definitive answer
  - Pursuing other alternatives
    - Call for analysis by AFSAA
    - Expanding research
- Strategic Effects is a key part of what aerospace power brings to the fight
- Increase importance with greater use of modeling and simulation in force sizing and QDR support
- *This is a critical need in the support of aerospace power*

Examples of Academic Models

- **Clausevitzian Trinity**
- **Warden's Rings**
- **Pape's Bombing to Win**
- **Boyd's OODA Loop**

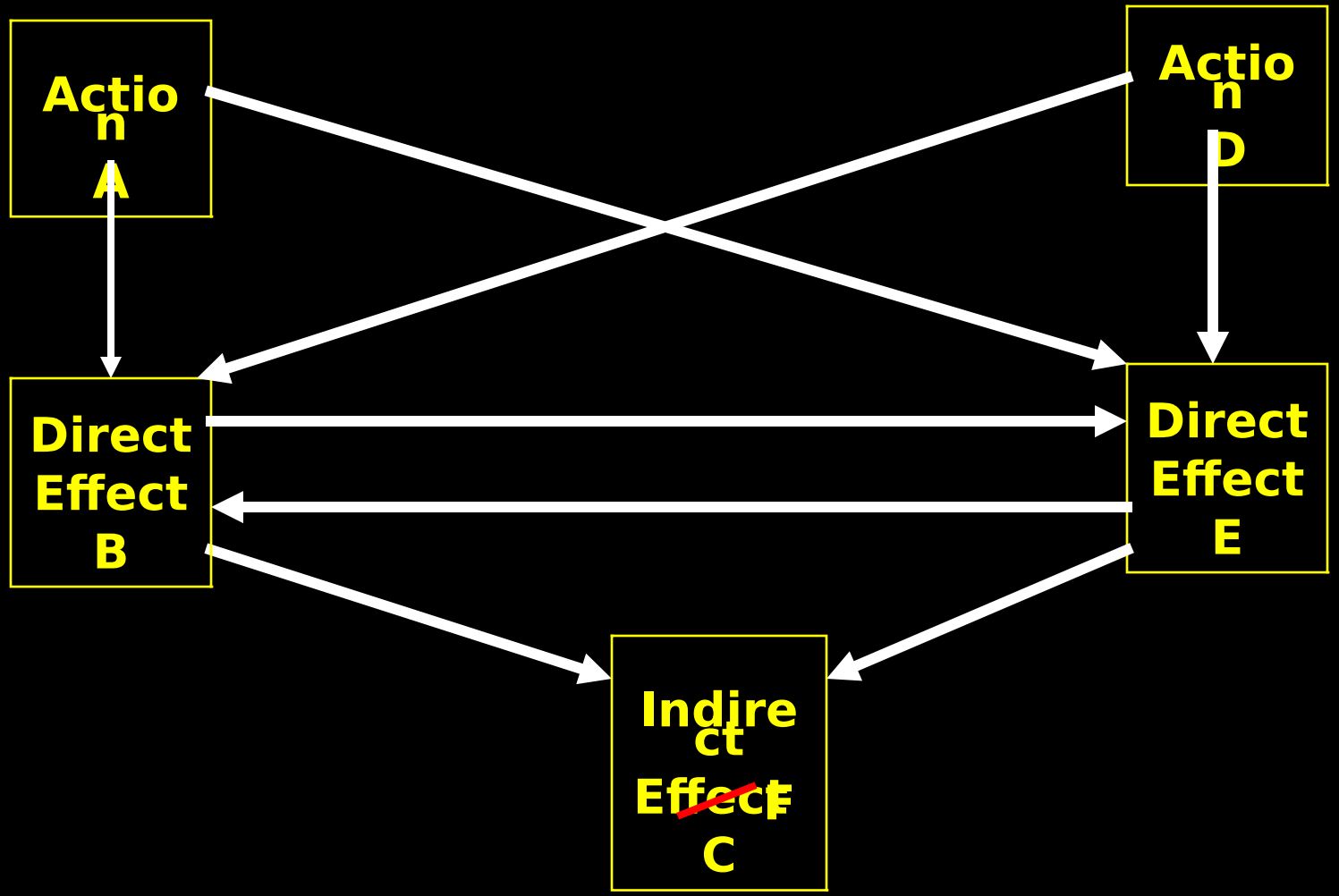
Additional Efforts

- Psychological Effects on ground troops
- New modeling technology
  - Complexity Theory
    - Notion that complicated behavior emerges form the interaction of individual components, each with its own set of rules that guide behavior
  - Adaptive Agents
    - “People” created within a software program who modify their behavior and make decisions in response to the environments that programmer create around them
  - Cyber-bioengineering
    - Transferring human characteristics to the adaptive agents

DIRECT / INDIRECT EFFECTS

- ***DIRECT* effects are immediate, first-order effects that usually result from physical weapons effects**
- ***INDIRECT* effects are higher-order systemic effects; often a cumulative result of many combined lower-order effects, and may be either physical or psychological**
- ***INDIRECT* effects do not have to occur at higher levels of war**
  - **Indirect effects can occur at the same level, higher level, or lower level of war than the original direct effect**
- ***INDIRECT* effects normally are delayed to some extent**
- ***Predicting* multiple levels of indirect effects can be extremely complicated**

DIRECT / INDIRECT EFFECTS



“DIRECT EFFECT”

AFDD 2-1 (draft) definition:

“Result of actions with no intervening effect or mechanism between act and outcome. Direct effects are usually immediate and easily recognizable.”

“INDIRECT EFFECT”

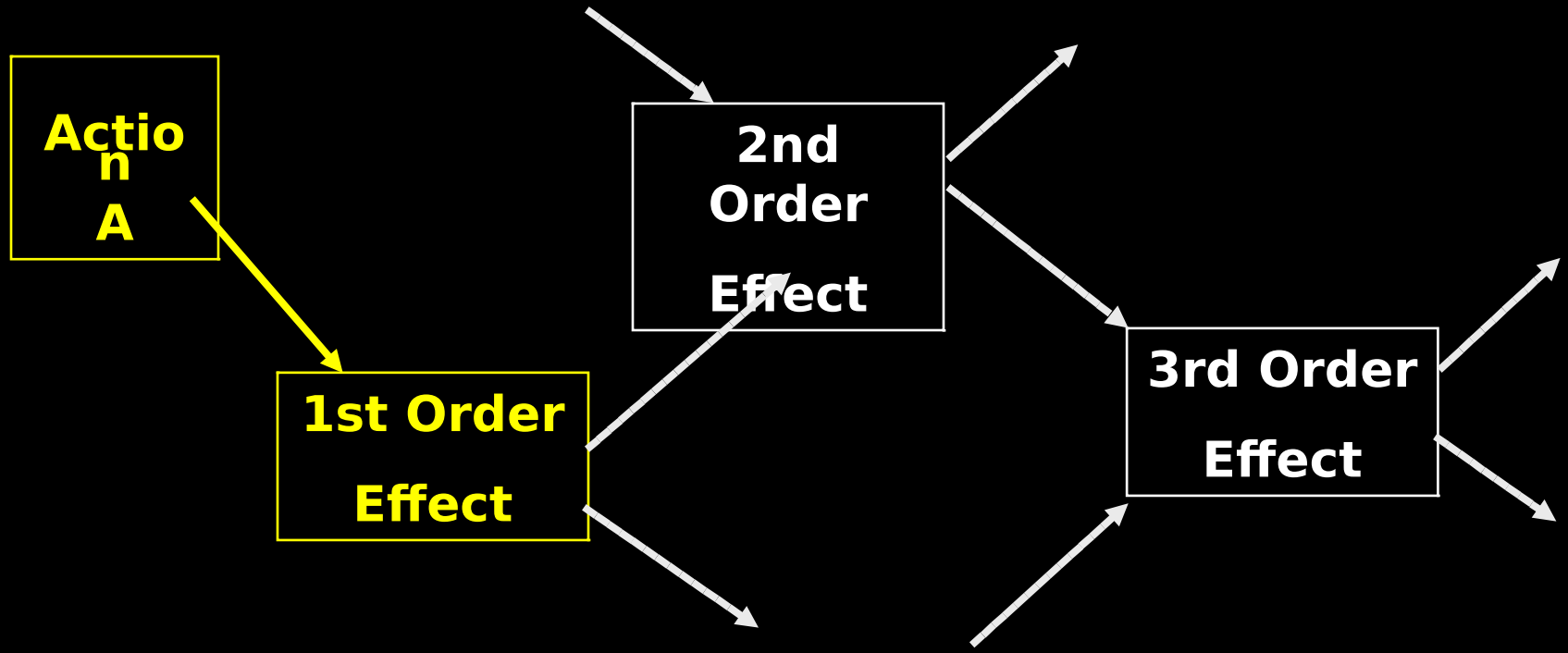
AFDD 2-1 (draft) definition:

“Result created through an intermediate effect or mechanism to produce the final outcome, which may be physical or psychological in nature. Indirect effects tend to be delayed, and may be difficult to recognize.”

EFFECT ORDER

- ***1st Order* Effect = Direct Effect**
- ***2nd Order* Effect = First layer of Indirect Effect**
- ***3rd Order* Effect = Second layer of Indirect Effect**
- **Predicting effects becomes more difficult at higher orders of effect**

EFFECT ORDER



. . .exponential complexity!

CUMULATIVE EFFECT

- Results from the aggregate of many direct or indirect effects

- May occur at the same or different levels of war as the contributing lower-order effects
  - Typically occurs at higher level
  - Example: Increased operational-level air superiority as a cumulative effect of destroying numerous SAM sites at the tactical level

CASCADING EFFECT

- Indirect effect that ripples through an enemy system, often influencing other systems as well
- Typically the result of influencing nodes that are critical to multiple systems
- Typically flows from higher to lower levels of war
  - Example: Destroying an enemy central HQ; effects cascade down through the enemy echelons to ultimately disrupt numerous tactical units on the battlefield

LEVELS OF WAR

- **Strategic Level:**
  - National capability/will level effects
  - Jomini's "war on paper"
  - Should not be linked to specific weapons systems or target sets, but rather to effects
- **Operational Level:**
  - Based on the function of operational art
  - Ties strategy to tactical employment, indicates why certain targets are more critical than others
- **Tactical Level:**
  - Where things happen in the real world (Clausewitz' "real war")
  - Battles & engagements to the soldier
  - Missions and sorties to the airman

LEVELS OF WAR

- **All physical acts occur at the tactical level of war (or through tactics); rarely will attacking a single, specific target directly produce strategic effects (but it can under some circumstances, such as an irreplaceable commander or headquarters)**
- **Strategic effects *usually* occur as the indirect, cumulative result of tactical / operational level effects**
- ***Might it be more useful to think in terms of strategy, operational art, and tactics rather than strategic, operational, and tactical levels of war? Perhaps these should be thought of more in terms of "levels of effect" or "command" than "levels of war."***

LEVELS OF WAR / EFFECT / COMMAND

Strategic Level	Operational Level	Tactical Level
Strategy	*Operational Art*	*Tactics*
- "War on Paper"		- "Real War"
- National / Military Level & Engagements (surface mediums)	Operational Art	- Battles
- Not tied to specific targets & Sorties		- Missions (aerospace

“STRATEGIC ATTACK”

From AFDD1:

“Military action carried out against an enemy’s center(s) of gravity or other vital target sets, including command elements, war-production assets, and key supporting infrastructure in order to effect a level of destruction and disintegration of the enemy’s military capacity to the point where the enemy no longer retains the ability or will to wage war or carry out aggressive activity”

"STRATEGIC EFFECT"

- **Not as yet officially defined in either Joint or USAF lexicon**
- **AFDD 2-1 (draft) definition:**

"Disruption of the enemy's strategy, ability, or will to wage war or carry out aggressive activity through destruction or disruption of his center(s) of gravity or other vital target sets, including command elements, war production assets, fielded forces, and key supporting infrastructure, or otherwise influencing his strategy"

"OPERATIONAL EFFECT"

- **Not currently defined**
- **Refined hack from the DoD definitions of "operational level of war" and "operational art":**

  "Links tactical results to strategy, and is typically the cumulative outcome of missions, engagements, and battles. Can also result from disrupting systems or areas of operational value."

- **Examples include air superiority, battlefield isolation, and C2 decapitation**

“TACTICAL EFFECT”

- **Not currently defined**
- **Refined hack from the DoD definitions of “tactics” and “tactical level of war”:**

  “Result of action(s) at the individual unit, mission, or engagement level. Can be either direct or indirect, and typically acts in concert with other tactical effects to produce results at higher levels of war.”

- **Examples include individual aircraft and tank attrition, airbase denial, suppression of enemy fire, etc.**

SO WHAT?

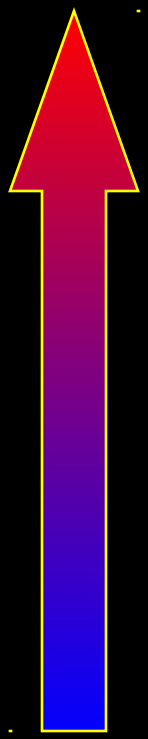
- **The MECHANISM that links direct effects to indirect effects must always be analyzed in detail**

- **Failure to do this has been a historical shortcoming in airpower planning:**
  - **Douhet and civilian morale bombing**
  - **Air interdiction of the Ho Chi Minh Trail**

- **We must recognize that mechanism analysis is never 100% accurate, and in some situations may be extremely complex**

COMPLEXITY OF MODELING EFFECTS

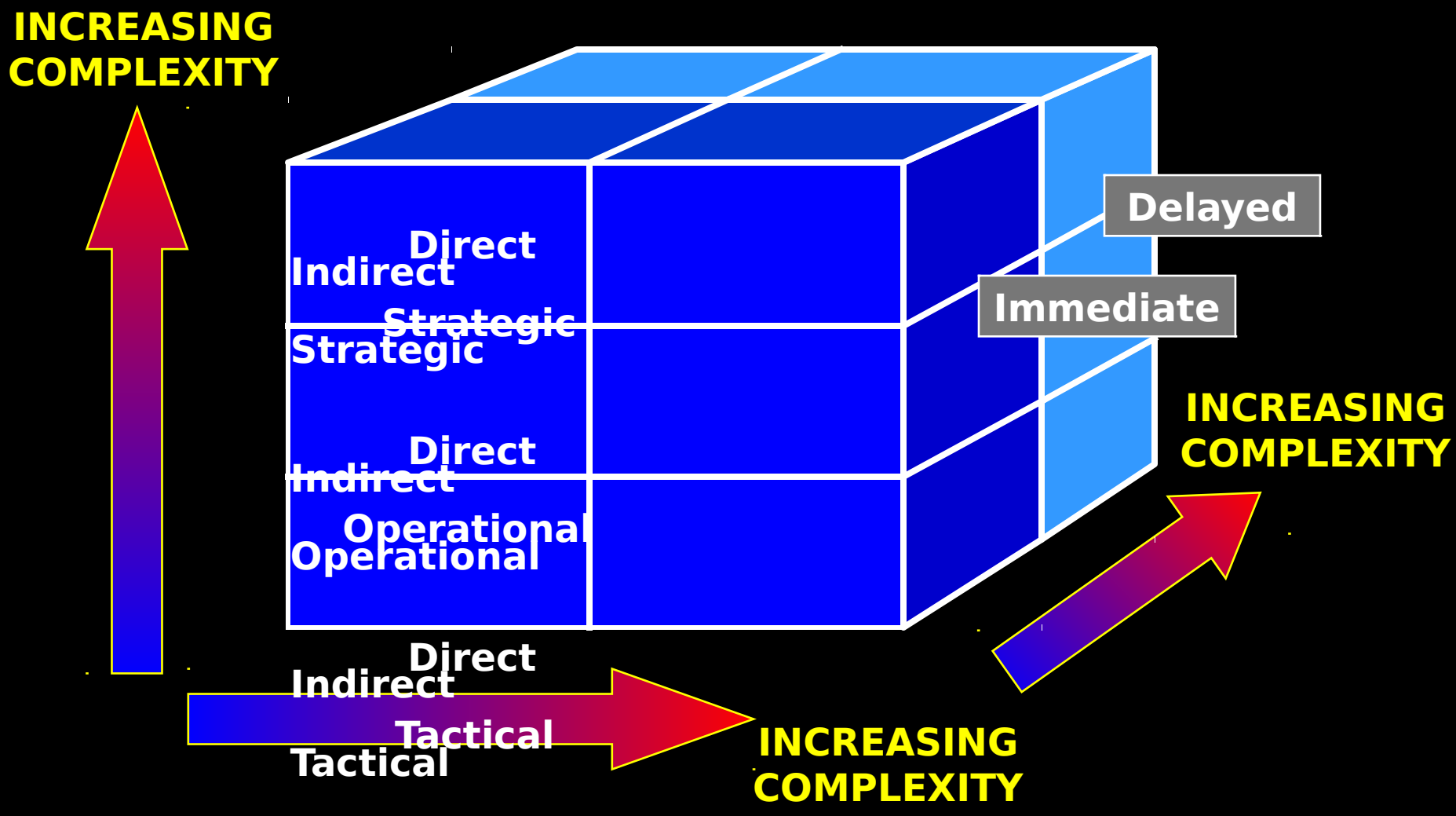
INCREASING COMPLEXITY



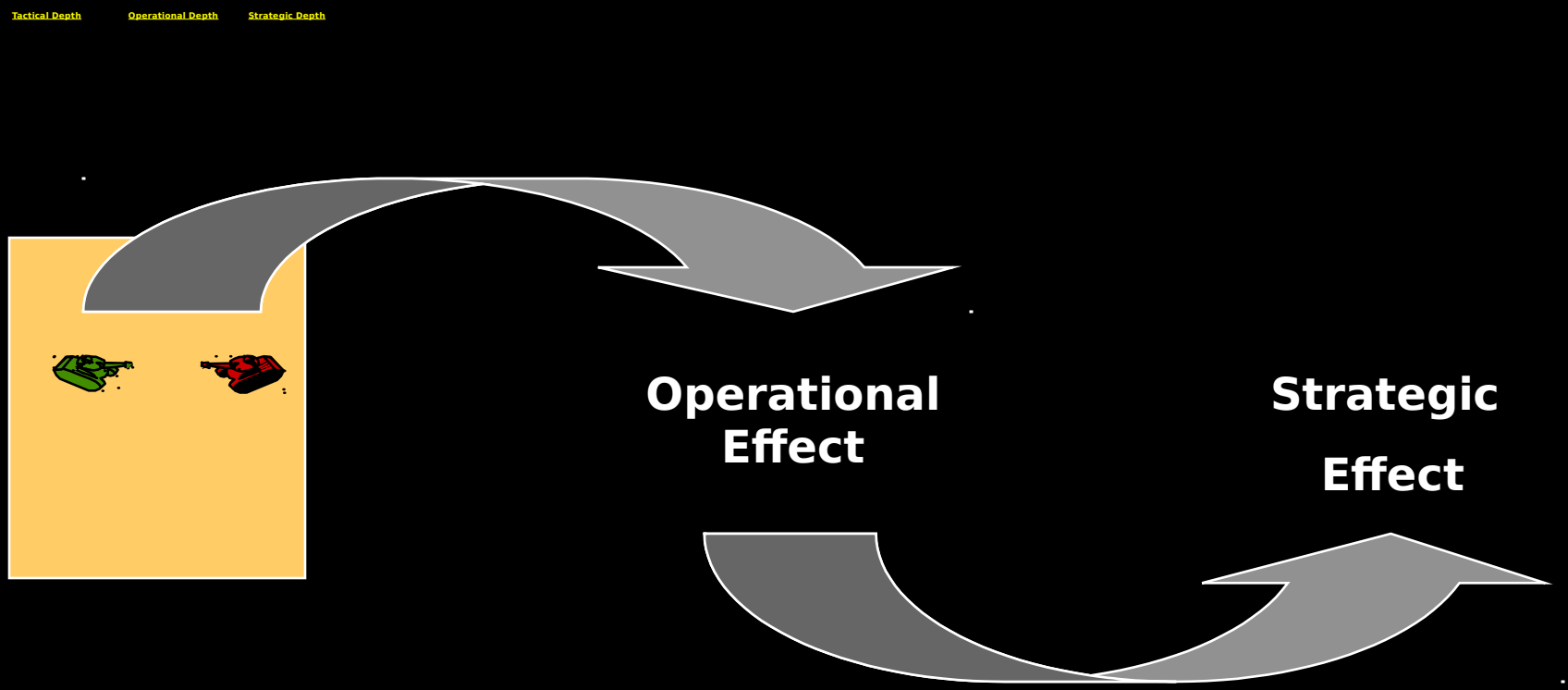
Direct Strategic	Indirect Strategic
Direct Operational	Indirect Operational
Direct Tactical	Indirect Tactical

INCREASING COMPLEXITY

ADDITION OF THE TIME FACTOR

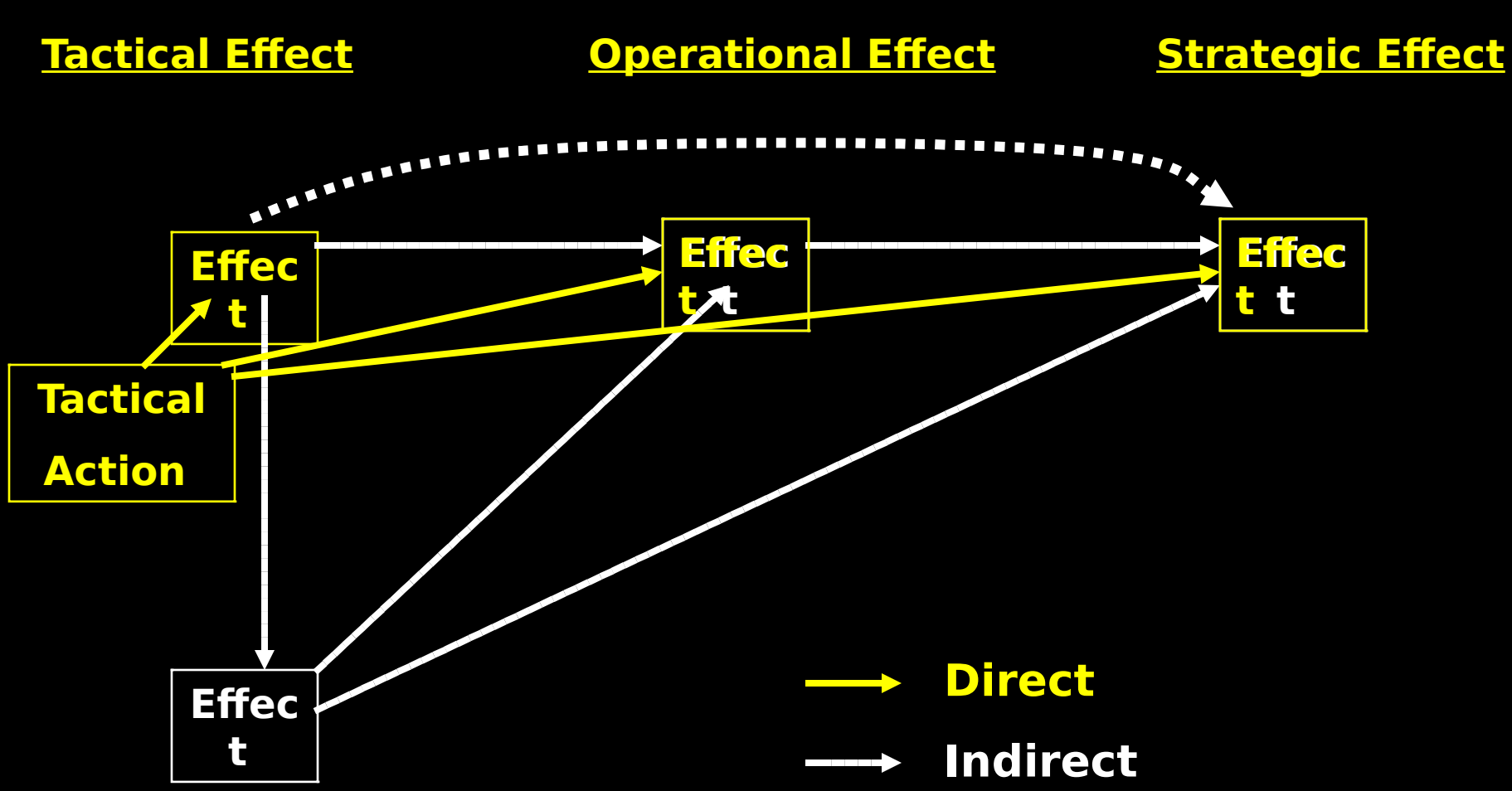


"CLASSIC" VIEW: STRATEGIC DEPTH

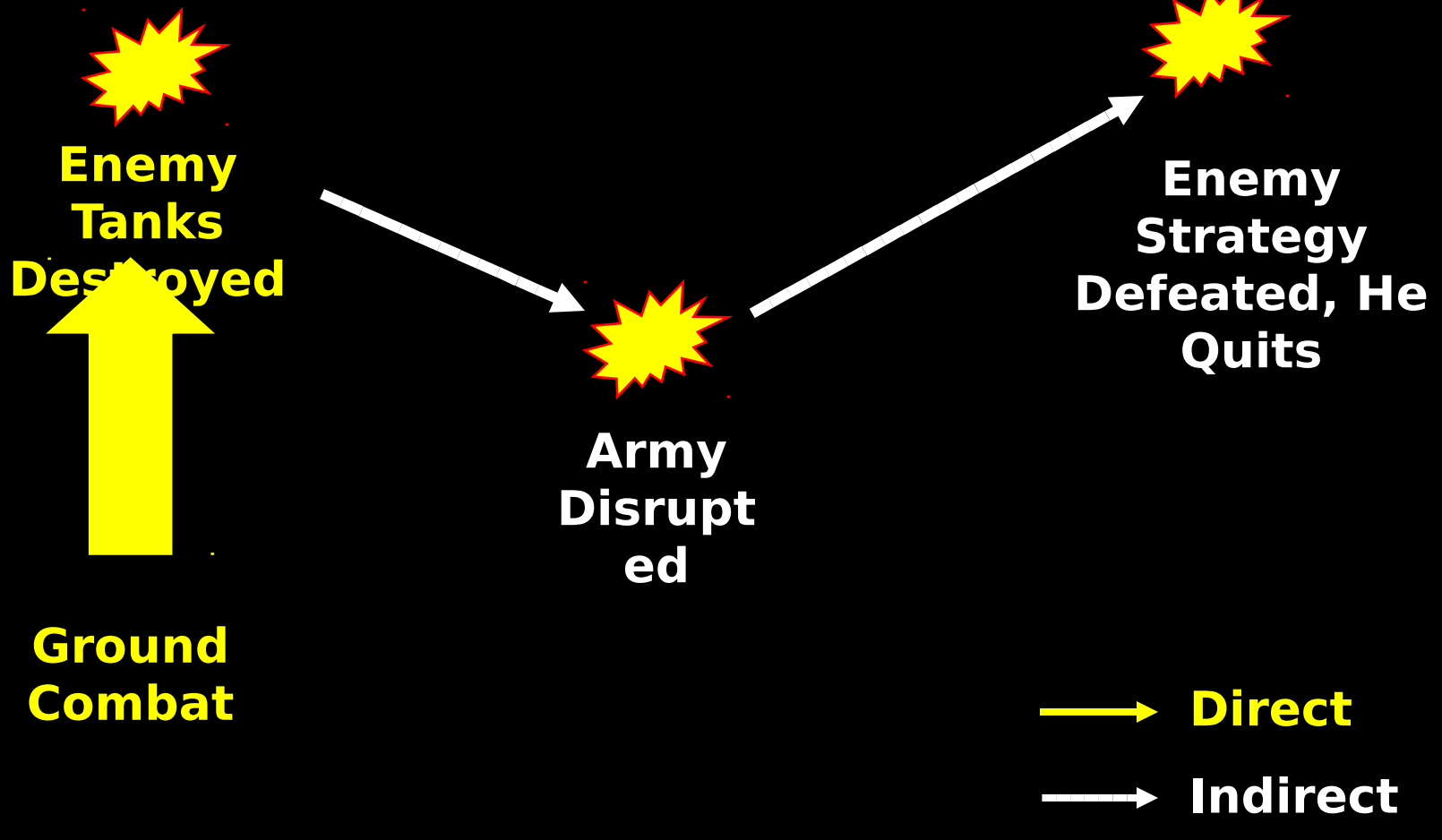


- Level of effect based on depth of territory occupied
- Effect mechanism limited to force-on-force confrontation (attrition)

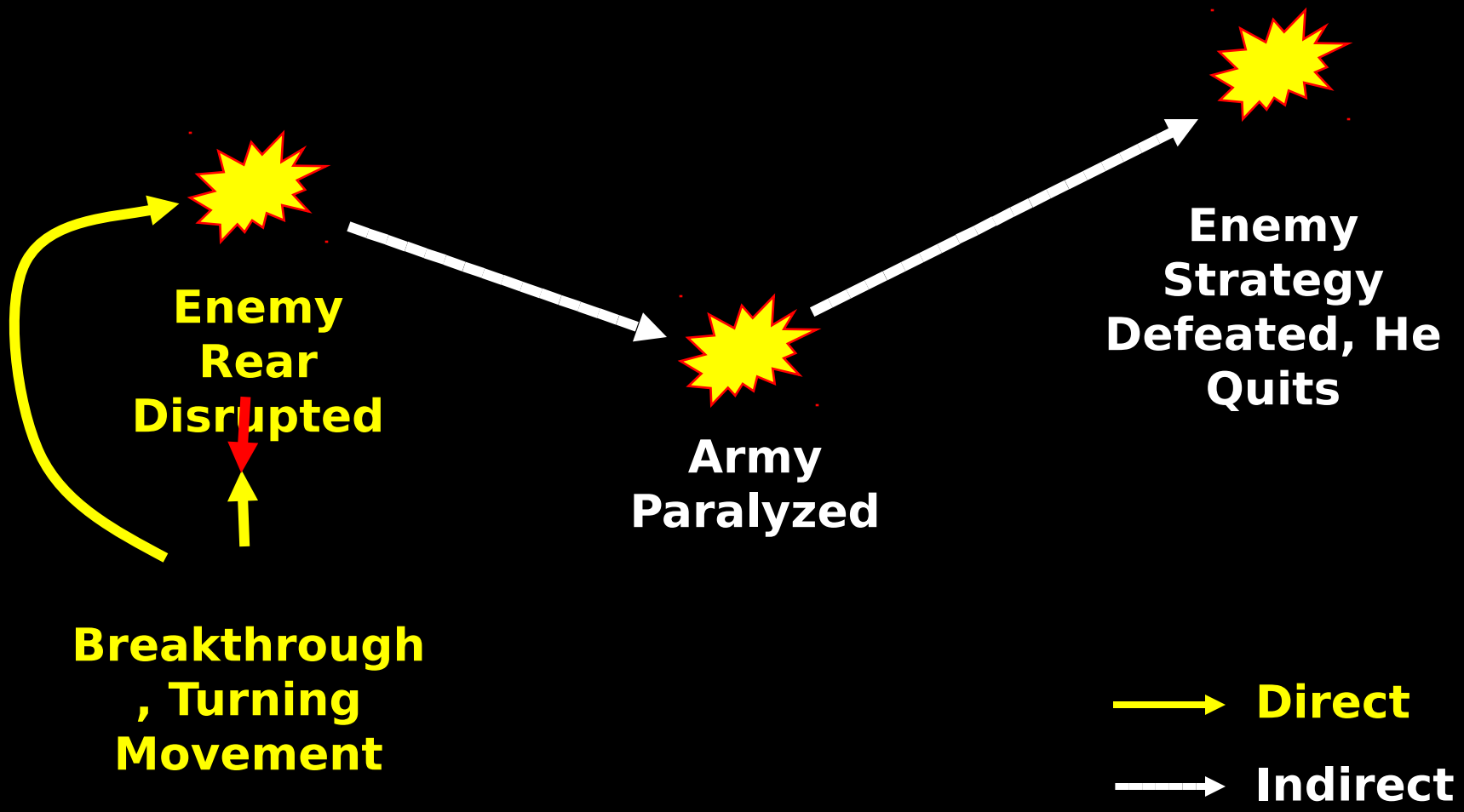
"NEW WAY OF WAR" VIEW: STRATEGIC EFFECT



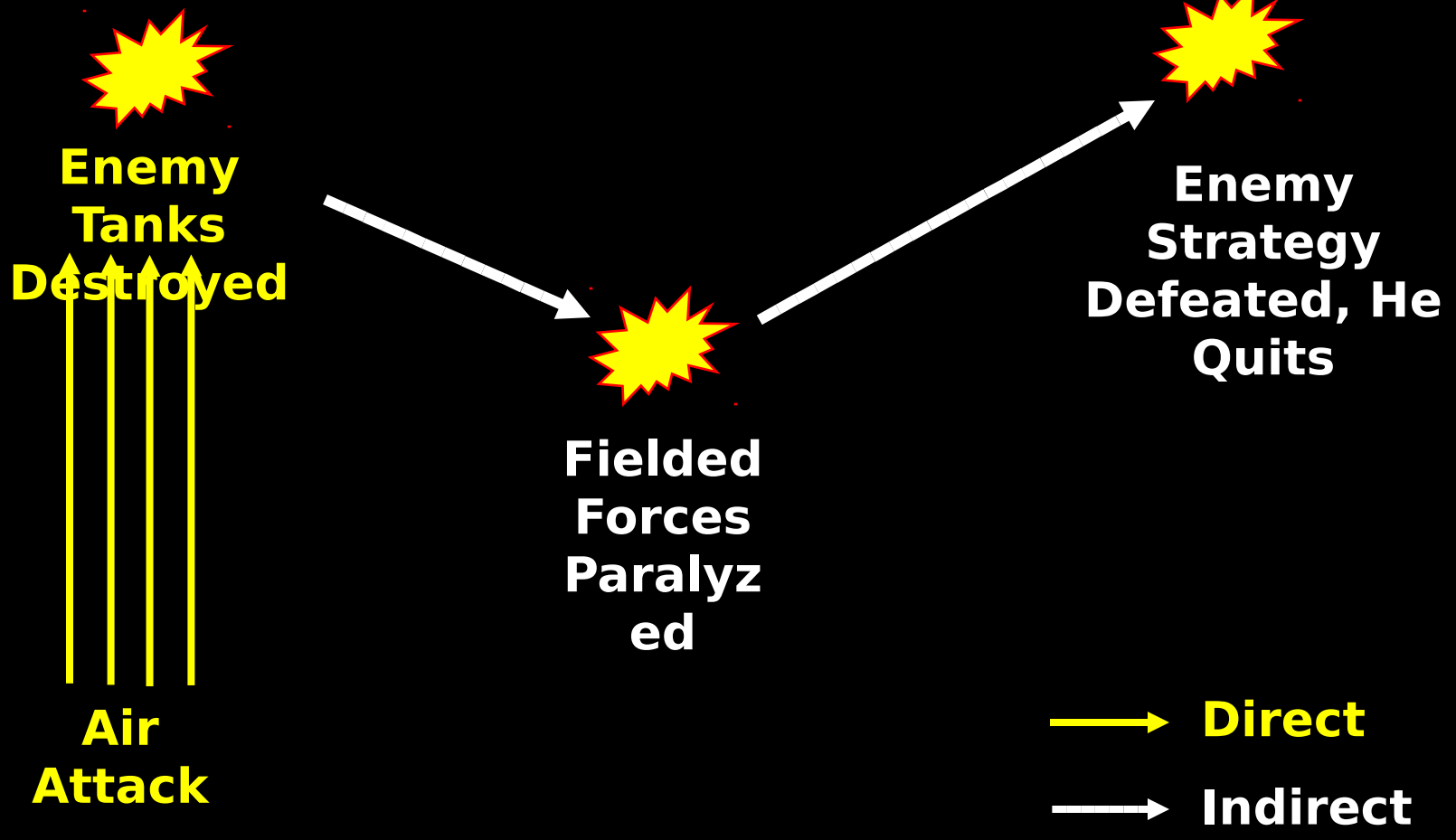
DIRECT ATTRITION
INDIRECT DISRUPTION



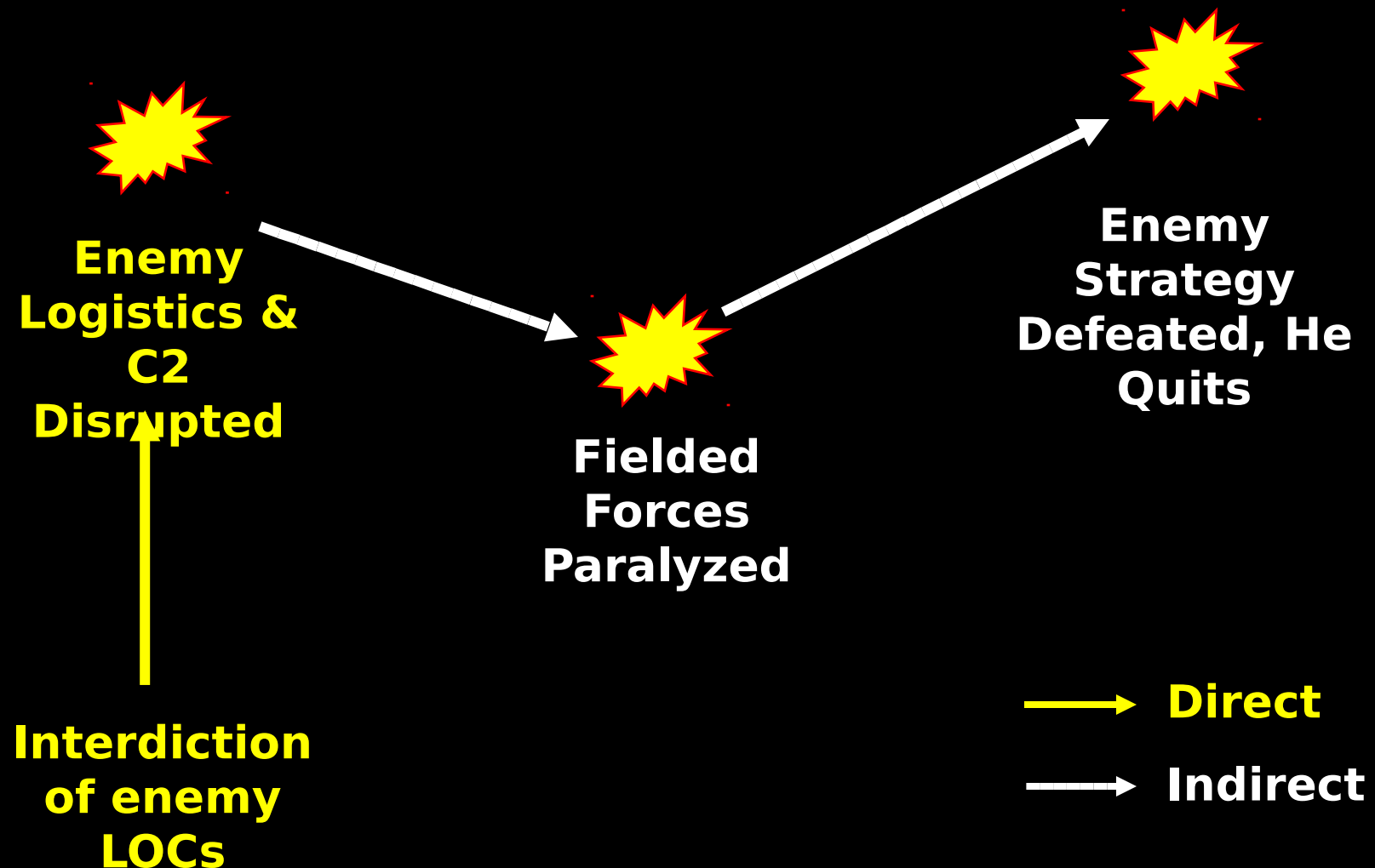
DIRECT & INDIRECT DISRUPTION



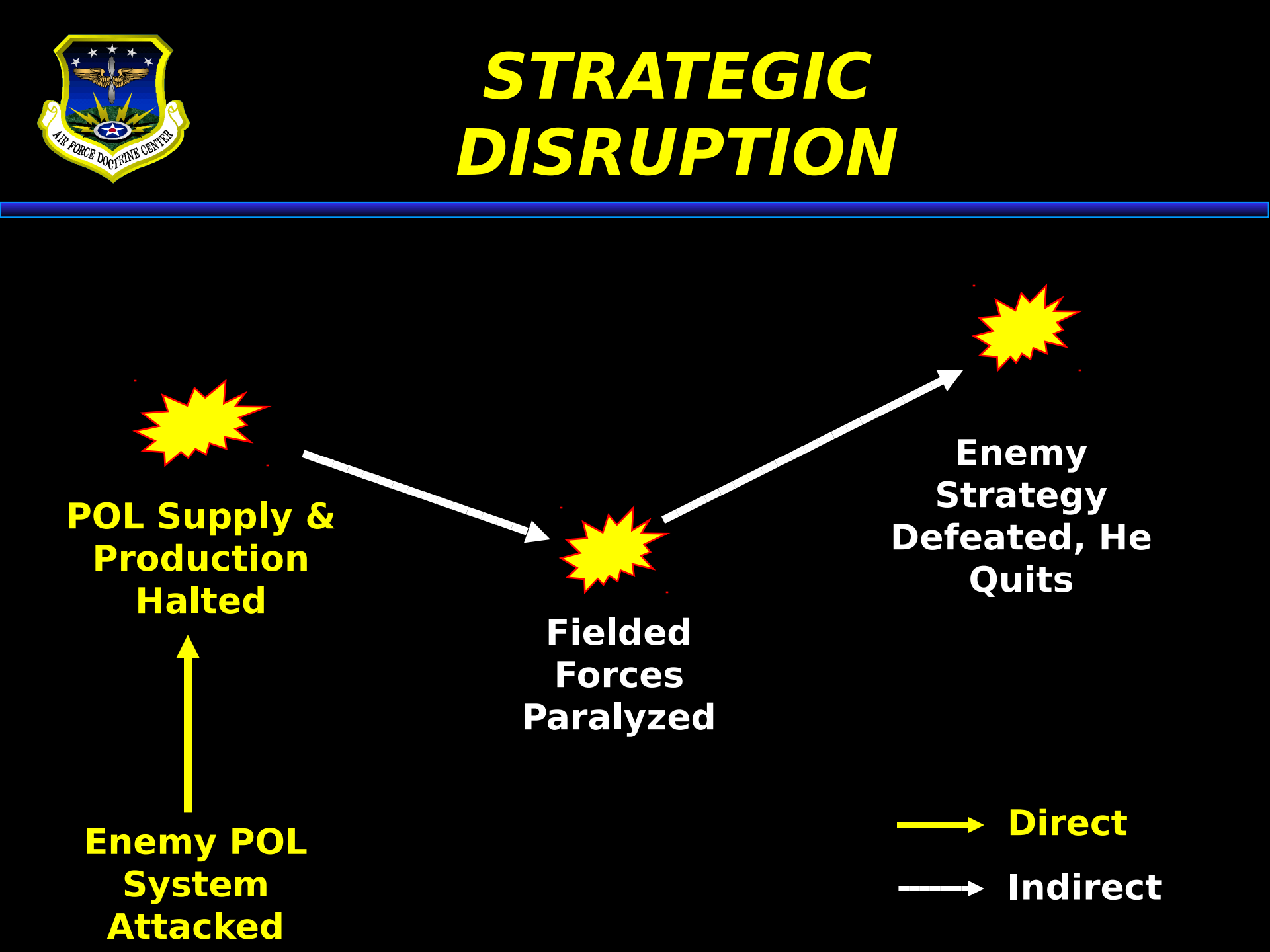
DIRECT ATTRITION
INDIRECT DISRUPTION



DIRECT & INDIRECT DISRUPTION



STRATEGIC DISRUPTION



ASSESSMENT

- A vital component -- “closes the loop”
- Lack of current terms at the operational & strategic levels
- Current term “Combat Assessment” focused at the tactical level

"COMBAT ASSESSMENT"

- **From JP 1-02, *DoD Dictionary of Military and Associated Terms*:**

"The determination of the overall effectiveness of force employment during military operations. Combat assessment is composed of three major components,

(a) battle damage assessment,

(b) munitions effects assessment, and

(c) reattack recommendation.

The objective of combat assessment is to identify recommendations for the course of military operations. The J-3 is normally the single point of contact for combat assessment at the joint force level, assisted by the joint force J-2. Also called CA. See also battle damage assessment."

OPERATIONAL ASSESSMENT

- The assessment of operational-level effects on both sides during war or MOOTW
- Can be used to determine phase shifts, etc. that are of operational concern
- Proposed definition:

"The measurement of effects at the operational level. Operational assessment determines whether or not force employment is properly supporting overall strategy by meeting operational objectives."

STRATEGIC ASSESSMENT

- **The assessment of strategic-level effects on both sides during war or MOOTW**
- **Provides guidance for high-level decisions on military and national strategy**
- **Proposed definition:**

"The measurement of effects at the strategic level. Strategic assessment determines whether overall strategy is working, and how well the strategic objectives of both sides are being achieved."

WHAT NEXT?

- **Publish definition in AFDD 2-1**
- **This will get the definitions into the USAF dictionary of terms**
- **JP 1-02, *DoD Dictionary of Military and Associated Terms* inclusion?**
- **Provide to modeling and simulations effort**

QUESTIONS?

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